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information segments;

re-sequencing, using said recovered index, said decrypted information segments to form an information stream comprising a plurality of image segments arranged according to said first segment sequence; and

decompressing a plurality of image frames forming each of said information stream segments by employing prediction-based decompression.

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24. (Thrice amended) An apparatus comprising:

a segmentation module, for segmenting an information stream into a plurality of information stream segments, said information stream segments arranged according to a first segment sequence, each of said information stream segments comprising a plurality of image frames;

a compression module, for compressing said image frames by employing prediction-based compression in forming said information stream segments;

a re-sequencing module, for re-arranging according to a second segment sequence, said information stream segments including said compressed image frames, said first segment sequence being related to said second segment sequence by an index; and

an encryption module, for encrypting said re-sequenced information stream segments and said index.

REMARKS

Applicant's representative would like to thank Examiner Douglas Meislahn and SPE Gilberto Barron for kindly taking a substantial amount of time on August 26, 2002 to discuss the merits of the subject invention in a telephonic Examiner Interview.

Applicant's representative is aware of the time constraint that is placed on the Examiners and is appreciative of the Examiners' willingness to devote such large quantity of time to discuss the case on the merit.

In view of the above amendment and the following discussion, the Applicant

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submits that all of the claims now pending in the application fully comply with the provisions of 35 U.S.C. § 112, first paragraph. Additionally, the Applicant submits that none of the claims now pending in the application is made obvious under the provisions of 35 U.S.C. § 103. Thus, the Applicant believes that all of these claims are now in allowable form.

I. REJECTION OF CLAIMS 1-18, AND 22-29 UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

The Examiner has again rejected claims 1-18 and 22-29 in paragraphs 12-13 of the Final Office Action under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Examiner alleged that "there is no discussion in the specification of the compression of image frames producing control information indicative of buffer behavior". Applicant respectfully disagrees.

Although Applicant disagrees with the Examiner, Applicant has agreed during the telephonic Examiner Interview to remove the term "buffer behavior" from Applicant's independent claims, thereby rendering the present 35 U.S.C. 112, first paragraph rejection moot. The Examiners indicated that this removal is acceptable in addressing this rejection. Thus, Applicant submits that claims 1-18 and 22-29 fully comply with the requirements of 35 U.S.C. 112, first paragraph.

II. REJECTION OF CLAIMS 1-5, 7-15, 17-18 AND 22-29 UNDER 35 U.S.C. § 103

The Examiner has again rejected claims 1-5, 7-15, 17-18 and 22-29 in Paragraphs 15-21 as being unpatentable over the Walker patent (United States Patent No. 5,014,310 issued May 7, 1991) in view of Inoue patent (United States Patent No. 5,195,134, issued March 16, 1993). In essence, the Examiner reiterated his previous 103 rejections as stated in the Office Action dated December 18, 2001. The Applicant respectfully disagrees.

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The Walker patent discloses a method and apparatus of rearranging adjacent lines of a baseband, NTSC, video signal such that chrominance and luminance features of the video signal are maintained. That is, the Walker patent addresses the problem of chrominance leakage of a 3.58 Mhz local color sub-carrier reference signal into the chrominance information of the video lines applied to a descrambled video line.

The Inoue patent discloses an apparatus for transmitting a scrambled video and audio signal via a satellite wherein the audio portion of the signal contains channel, start/end time and standard time information of programs. A video tape recorder can record programs based on the information contained in the audio portion of the signal.

During the Examiner Interview, the Applicant directed the Examiners' attention that neither Walker nor Inoue (either singly or in any permissible combination) discloses the concepts of prediction-based compression and prediction-based decompression. Since both Walker and Inoue operate within the NTSC environment, prediction-based compression and prediction-based decompression are not disclosed or suggested. The Examiners indicated that recitation of prediction-based compression or prediction-based decompression in Applicant's independent claims 1, 15, 23 and 24 should overcome the present rejections based on Walker in view of Inoue.

Finally, dependent claims 2-14, 16-18, 22 and 25-29 depend from claims 1, 15 or 23 and recite additional features therefore. As such, and for the exact same reason set forth above, the Applicant submits that none of these claims are obvious with respect to the teachings of the cited references. Therefore, the Applicant submits that all of these dependent claims also fully satisfy the requirements of 35 U.S.C. §103 and are patentable thereunder.

Conclusion

Thus, the Applicant submits that all of these claims now fully satisfy the requirements of 35 U.S.C. §112 and §103. Consequently, the Applicant believes that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

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If, however, the Examiner believes that there are any unresolved issues requiring the maintenance of the present final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Kin-Wah Tong, Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

8/26/02


Kin-Wah Tong, Attorney
Reg. No. 39,400
(732) 530-9404

Moser, Patterson & Sheridan, LLP
595 Shrewsbury Avenue
First Floor,
Shrewsbury, New Jersey 07702

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Appendix

(Marked-up version of amended claims)

1. (Thrice amended) A method for securing an information stream comprising a sequence of image frames, said method comprising the steps of:
 - segmenting said information stream into a plurality of information stream segments having a first segment sequence, each of said information stream segments comprising a plurality of image frames;
 - compressing said image frames by employing prediction-based compression in forming said information stream segments[, where said step of compressing said image frames produces control information indicative of buffer behavior];
 - re-sequencing said information stream segments to produce a re-sequenced information stream having a second segment sequence, said first segment sequence being related to said second segment sequence by an index; and
 - encrypting said re-sequenced information stream and said index.
15. (Thrice amended) A method for recovering image frames from an information stream formed according to the securing method of claim 1, said method for recovering comprising the steps of:
 - recovering said index relating said second segment sequence to said first segment sequence;
 - decrypting said encrypted information stream segments to produce corresponding decrypted information stream segments;
 - re-sequencing, using said recovered index, said decrypted information stream segments; and
 - decompressing, using a prediction-based decompression process associated with said compression process, said compressed image frames included within said decrypted information stream segments.
23. (Thrice amended) A method for recovering an information stream having a first

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segment sequence from an encrypted re-sequenced information stream having a second segment sequence, said method comprising the steps of:
recovering an index relating said second segment sequence to said first segment sequence;
decrypting said encrypted information segments to form respective decrypted information segments;
re-sequencing, using said recovered index, said decrypted information segments to form an information stream comprising a plurality of image segments arranged according to said first segment sequence; and
decompressing a plurality of image frames forming each of said information stream segments by employing prediction-based decompression[, where said step of decompressing said image frames produces control information indicative of said buffer behavior].

24. (Thrice amended) An apparatus comprising:

a segmentation module, for segmenting an information stream into a plurality of information stream segments, said information stream segments arranged according to a first segment sequence, each of said information stream segments comprising a plurality of image frames;

a compression module, for compressing said image frames by employing prediction-based compression in forming said information stream segments[, where said compressing of said image frames produces control information indicative of buffer behavior];

a re-sequencing module, for re-arranging according to a second segment sequence, said information stream segments including said compressed image frames, said first segment sequence being related to said second segment sequence by an index; and

an encryption module, for encrypting said re-sequenced information stream segments and said index.